

## Office Action Summary

Application No.

09/719,893

Applicant(s)

OKADA ET AL.

Examiner

Melanie Bagwell-Bissett

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 19 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "synthetic rubber type resin" in claim 5 is a relative term which renders the claim indefinite. The term "synthetic rubber type" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show Figure 4 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Summary of the Claims***

5. Claim 1 is drawn to a heat conductive sheet having a substrate and a heat conductive resin layer, where the heat conductive resin layer contains a heat conductive filler dispersed in a binder resin. Claim 10 is drawn to a method of producing a heat conductive sheet by supporting a substrate with a support, applying a film-forming resin composition containing a binder resin and a heat conductive filler to the substrate, and removing the support from the substrate. Claims 2-3 limit the substrate, claims 5-6 limit the binder, claims 7-9 limit the filler, and claim 4 limits the method for making the sheet.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishizawa. Nishizawa (USPN 5,741,579) can be found on the applicant's Form PTO-1449.

8. Nishizawa discloses a heat-conductive sheet comprising a substrate layer and a silicone gel layer having inorganic heat-conductive particles dispersed therein (abstract). Example 1 shows a silicone gel filled with alumina powder applied to an aluminum foil substrate. Claim 3 is written to limit the plastic film of claim 2. Since metal foil substrates are chosen instead of plastic film, the reference anticipates any limitation of the plastic film.

9. Regarding claim 4, Nishizawa teaches a method for forming the sheets comprising coating aluminum foil with a silicone-based composite material (col. 3 lines 10-18). Although the reference does not mention holding the substrate on a support during the coating process, it is the examiner's position that the resulting product would be the same. Because claim 4 is written as a product-by-process claim, the process bears little patentable weight where the resulting product would be equivalent. Thus, the reference anticipates claim 4.

10. Claims 1-4 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker-Hannifin Corporation. Parker-Hannifin Corporation (WO 99/05722) can be found on the applicant's Form PTO-1449.

11. The reference discloses double-sided thermally-conductive adhesive tapes comprising two different pressure-sensitive adhesives coated on opposite sides of a substrate (p. 8 lines 1-25). The substrates include polymeric films and metal foils, and one of the adhesives is preferably silicone-based. Inorganic fillers such as boron nitride and silicon carbide may be dispersed in the adhesives as thermally-conductive fillers (p. 14 lines 13-32). Claim 3 is written to limit the plastic film of claim 2. Since metal foil substrates are chosen instead of plastic film, the reference anticipates any limitation of the plastic film.

12. Regarding claim 4, the reference teaches a method for forming the sheets comprising cold nipping adhesive layers onto an aluminum foil substrate (example 1). Although the reference does not mention holding the substrate on a support during the

coating process, it is the examiner's position that the resulting product would be the same. Because claim 4 is written as a product-by-process claim, the process bears little patentable weight where the resulting product would be equivalent. Thus, the reference anticipates claim 4.

### ***Priority***

13. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker-Hannifin Corporation.

16. Parker-Hannifin Corporation applies as above, lacking exemplification of including both silicon carbide and boron nitride particles in the adhesive compositions of the invention. However, the reference does note the use of mixtures of the components (p. 14 lines 29-32). It is the examiner's position that it would have been prima facie obvious to include both silicon carbide and boron nitride particles in the silicon adhesive

of the invention in the expectancy of forming a tape having equally improved thermal conductivity.

17. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker-Hannifin Corporation in view of Eddy et al.

18. Parker-Hannifin Corporation applies as above for the heat-conductive sheet, noting the use of mixtures of heat-conductive fillers but lacking express mention of the use of particles of different sizes. Eddy et al. teaches a fuser member comprising a substrate and a thermally conductive fusing layer, where the fusing layer comprises a binder, silicone powder, and alumina particles in at least two different sizes (col. 1 lines 5-20). The use of aluminum oxide is preferred for improved thermal conductivity, and the use of the alumina in two different sizes is preferred to improve the processibility and further improve heat conductivity (col. 6 lines 25-55). Parker-Hannifin Corporation teaches the use of aluminum oxide, also teaching the use of fillers in mixtures. From Eddy's teaching, it is the examiner's position that it would have been prima facie obvious to incorporate alumina particles of two different sizes, in a mixture with another filler, into Parker-Hannifin Corporation's invention. A mixture of aluminum oxide of two sizes with another filler would provide a mixture of inorganic particles having different particles diameters. Motivation for including the aluminum oxide of different sizes would have been to further improve heat conductivity and to improve processibility.

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19. Claims 1-2 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eddy et al.

20. Eddy et al. discloses a fuser member comprising a substrate and a thermally conductive fusing layer, where the fusing layer comprises a binder, silicone powder, and alumina particles in at least two different sizes (col. 1 lines 5-20). The use of aluminum oxide is preferred for improved thermal conductivity, and the use of the alumina in two different sizes is preferred to improve the processibility and further improve heat conductivity (col. 6 lines 25-55). Since the invention teaches alumina having two different particle sizes, the silicone particles inherently possess a particle diameter different than at least one of the portions of alumina particles. However, the reference does not exemplify the making of a heat-conductive sheet. It is noted that suitable substrates in the invention include sheets and films made of materials such as metal and plastic (col. 4 line 64-col. 5 line 8). Thus, it is the examiner's position that it would have been prima facie obvious to coat the fusing layer on a plastic or metal film or sheet to produce a heat conductive sheet having equally improved thermal conductivity.

21. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker-Hannifin Corporation in view of Matsushita Denki.

22. Parker-Hannifin Corporation applies as above, teaching that the tapes may be coated using conventional techniques, but not teaching the applicant's specific steps of supporting a substrate, coating the substrate, and removing the substrate from the support. Matsushita Denki teaches a conventional method of coating a substrate with

an adhesive, where the coating is sprayed onto the substrate. The substrate is supported on a conveyor before the coating process, where the coated substrate is removed from the support for application (abstract). It is the examiner's position that it would have been prima facie obvious to support the substrate during coating by a conveyor or other means to provide support while also transporting the product for further processing. It also would have been prima facie obvious to remove the substrate from the support to apply the product in the desired manner.

23. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa in view of Matsushita Denki.

24. Nishizawa applies as above, teaching that the sheets may be formed by coating the substrate, but not teaching the applicant's specific steps of supporting a substrate, coating the substrate, and removing the substrate from the support. Matsushita Denki teaches a conventional method of coating a substrate, where the coating is sprayed onto the substrate. The substrate is supported on a conveyor before the coating process, where the coated substrate is removed from the support for application (abstract). It is the examiner's position that it would have been prima facie obvious to support the substrate during coating by a conveyor or other means to provide support while also transporting the product for further processing. It also would have been prima facie obvious to remove the substrate from the support to apply the product in the desired manner.

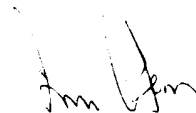


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Bagwell-Bissett whose telephone number is (703) 308-6539. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Jim Seidleck", is located in the middle right portion of the page.

mdb  
February 8, 2002



A DOCPHOENIX

## APPL PARTS

IMIS \_\_\_\_\_  
Internal Misc. Paper

LET. \_\_\_\_\_  
Misc. Incoming Letter

371P \_\_\_\_\_  
PCT Papers in a 371 Application

A... \_\_\_\_\_  
Amendment Including Elections

ABST \_\_\_\_\_  
Abstract

ADS \_\_\_\_\_  
Application Data Sheet

AF/D \_\_\_\_\_  
Affidavit or Exhibit Received

APPENDIX \_\_\_\_\_  
Appendix

ARTIFACT \_\_\_\_\_  
Artifact

BIB \_\_\_\_\_  
Bib Data Sheet

CLM \_\_\_\_\_  
Claim

COMPUTER \_\_\_\_\_  
Computer Program Listing

CRFL \_\_\_\_\_  
All CRF Papers for Backfile

DIST \_\_\_\_\_  
Terminal Disclaimer Filed

DRW \_\_\_\_\_  
Drawings

FOR \_\_\_\_\_  
Foreign Reference

FRPR \_\_\_\_\_  
Foreign Priority Papers

IDS \_\_\_\_\_  
IDS Including 1449

NPL \_\_\_\_\_  
Non-Patent Literature

OATH \_\_\_\_\_  
Oath or Declaration

PET. \_\_\_\_\_  
Petition

RETMAIL \_\_\_\_\_  
Mail Returned by USPS

SEQLIST \_\_\_\_\_  
Sequence Listing

SPEC \_\_\_\_\_  
Specification

SPEC NO \_\_\_\_\_  
Specification Not in English

TRNA \_\_\_\_\_  
Transmittal New Application

CTNF \_\_\_\_\_  
Count Non-Final

CTRS \_\_\_\_\_  
Count Restriction

EXIN \_\_\_\_\_  
Examiner Interview

M903 \_\_\_\_\_  
DO/EO Acceptance

M905 \_\_\_\_\_  
DO/EO Missing Requirement

NFDR \_\_\_\_\_  
Formal Drawing Required

NOA \_\_\_\_\_  
Notice of Allowance

PETDEC \_\_\_\_\_  
Petition Decision

## OUTGOING

CTMS \_\_\_\_\_  
Misc. Office Action  
02-13-02 1449 /  
Signed 1449

892 \_\_\_\_\_  
892

ABN \_\_\_\_\_  
Abandonment

APDEC \_\_\_\_\_  
Board of Appeals Decision

APEA \_\_\_\_\_  
Examiner Answer

CTAV \_\_\_\_\_  
Count Advisory Action

CTEQ \_\_\_\_\_  
Count Ex parte Quayle

CTFR \_\_\_\_\_  
Count Final Rejection

## INCOMING

AP.B \_\_\_\_\_  
Appeal Brief

C.AD \_\_\_\_\_  
Change of Address

N/AP \_\_\_\_\_  
Notice of Appeal

PA.. \_\_\_\_\_  
Change in Power of Attorney

REM \_\_\_\_\_  
Applicant Remarks in Amendment

XT/ \_\_\_\_\_  
Extension of Time filed separate

BACKFILE DOCUMENT INDEX SHEET

### Internal

SRNT \_\_\_\_\_  
Examiner Search Notes

CLMPTO \_\_\_\_\_  
PTO Prepared Complete Claim Set

ECBOX \_\_\_\_\_  
Evidence Copy Box Identification

WCLM \_\_\_\_\_  
Claim Worksheet

WFEE \_\_\_\_\_  
Fee Worksheet

### File Wrapper

FWCLM \_\_\_\_\_  
File Wrapper Claim

IIFW \_\_\_\_\_  
File Wrapper Issue Information

SRFW \_\_\_\_\_  
File Wrapper Search Info